

Claims:

1. A method for implementing a transceiver, in which method radio-frequency signals are transmitted and received with a transceiver for communicating information, wherein a radio-frequency signal received at a receiving stage is subjected to at least a first filtering step, in which a desired receiving signal is separated from the signal with a filter, and a signal to be transmitted at a transmission stage is subjected to at least a second filtering step, in which a desired transmission signal is separated from the signal with a filter, to be transmitted, **characterized** in that the same filter is used at least partly in said first and second filtering steps.

2. The method according to claim 1, **characterized** in that at the receiving step, also at least a second filtering step is performed, in which the received signal is subjected to rejection of signals outside of the receiving frequency range substantially defined for the system.

3. The method according to claim 1 or 2, **characterized** in that at the receiving stage, also at least a first conversion step is taken, in which the received analog signal is converted to digital form.

4. The method according to claim 3, **characterized** in that at the transmission stage, also at least a second conversion step is taken, in which the digital signal to be transmitted is converted to analog form.

5. The method according to claim 3 or 4, **characterized** in that at the receiving stage, before the first filtering step, at least a first mixing step is taken, in which the received radio-frequency signal is mixed with a local oscillator signal.

6. The method according to claim 5, **characterized** in that the received signal is converted at the first mixing step to a baseband signal.

7. The method according to claim 6, **characterized** in that the method also comprises elimination of a DC offset voltage from the signal formed in the first mixing step.

5 8. The method according to claim 5, **characterized** in that the received signal is converted in the first mixing step to at least one intermediate frequency.

10 9. A transceiver (1) comprising transmission means (LO, M3, M4, PA, SW, BF, ANT) for transmitting radio-frequency signals and receiving means (ANT, BF, SW, LNA, M1, M2, LO) for receiving radio-frequency signals, which receiving means comprise filtering means (CF1, CF2) for filtering the received radio-frequency signal to separate a desired receiving signal, and which transmission means comprise at least filtering means (CF1, CF2) for separating a desired transmission signal to be transmitted as a radio-frequency signal, **characterized** in that said transmission means and receiving means comprise at least partly a common filter (CF1, CF2).

20 10. The transceiver (1) according to claim 9, **characterized** in that it also comprises at least a band filter (BF) to reject signals outside of the receiving frequency range substantially defined in the system, from the received signal.

25 11. The transceiver (1) according to claim 9 or 10, **characterized** in that it also comprises means (AD1, AD2) for converting the received analog signal to digital form.

30 12. The transceiver (1) according to claim 11, **characterized** in that it also comprises at least means (DA1, DA2) for converting the digital signal to be transmitted to analog form.

35 13. The transceiver (1) according to claim 11 or 12, **characterized** in that it also comprises at least one mixer (M1, M2) to mix a local oscillator signal with the received radio-frequency signal.

14. The transceiver (1) according to claim 13, **characterized** in that the received signal is arranged to be converted in said mixer (M1, M2) to a baseband signal.

5 15. The transceiver (1) according to claim 14, **characterized** in that said means (DA1, DA2) for converting the digital signal to be transmitted to analog form is also used for eliminating a DC offset voltage from the signal formed in said mixer (M1, M2).

10 16. The transceiver (1) according to claim 13, **characterized** in that the received signal is arranged to be converted in said mixer (M1, M2) to at least one intermediate frequency.

17. A wireless communication device (MS) comprising transmission  
15 means (LO, M3, M4, PA, SW, BF, ANT) for transmitting radio-fre-  
quency signals and receiving means (ANT, BF, SW, LNA, M1, M2, LO)  
for receiving radio-frequency signals, which receiving means comprise  
filtering means (CF1, CF2) for filtering the received radio-frequency  
signal to separate a desired receiving signal, and which transmission  
20 means comprise at least filtering means (CF1, CF2) for separating a  
desired transmission signal to be transmitted as a radio-frequency  
signal, **characterized** in that said transmission means and receiving  
means comprise at least partly a common filter (CF1, CF2).